Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (canceled)

Claim 2 (currently amended): [[A]] The method of ~~testing the integrity of permeable hollow membranes used for filtering solids from a liquid suspension according to claim 1~~ claim 5 wherein the ~~integrity is tested~~ integrity test is performed during each backwash of the membrane.

Claim 3 (currently amended): [[A]] The method of ~~testing the integrity of permeable hollow membranes used for filtering solids from a liquid suspension according to claim 1~~ claim 5 wherein the ~~integrity is tested~~ integrity test is performed after a predetermined number of backwashes of the membrane.

Claim 4 (currently amended): [[A]] The method of ~~testing the integrity of permeable hollow membranes used for filtering solids from a liquid suspension according to claim 1~~ claim 5 wherein ~~said~~ the predetermined value corresponds to a Logarithmic Reduction Value of 4.

Claim 5 (new): A method of integrity testing a permeable hollow fiber membrane immersed in a liquid suspension comprising:

backwashing the membrane by applying a gas at a pressure below a bubble point to a liquid permeate in a lumen within the membrane;

allowing a gas pressure in the lumen of the membrane to increase to a predetermined level above a pressure on another side of the membrane;

isolating the lumen of the membrane;

measuring a reduction in the gas pressure within the lumen of the membrane; and

comparing the measured reduction in pressure against a predetermined value.

Claim 6 (new): The method of claim 5, wherein the integrity test is performed in about 30 seconds to one minute.

Claim 7 (new): The method of claim 5, wherein the integrity test is performed in five to ten seconds.

Claim 8 (new): The method of claim 5, further comprising:

applying a liquid suspension to an outer surface of the membrane;

filling the membrane lumen with liquid; and

commencing filtration through the membrane by providing a pressure differential across the membrane, wherein liquid suspension passes through the walls of the membrane to be drawn off as permeate from the membrane lumen, and solids are retained on or in the membrane or otherwise as suspended solids within liquid suspension surrounding the membrane.

Claim 9 (new): A method of integrity testing a permeable hollow fiber membrane comprising:

backwashing a membrane having a lumen and an external wall by applying a gas at a pressure below a bubble point to a liquid permeate within the lumen of the membrane;

measuring a rate of gas pressure decay within the lumen of the membrane over a predetermined period; and

comparing the measured rate of gas pressure decay with a predetermined value.

Claim 10 (new): The method of claim 9, further comprising the step of allowing a gas pressure in the lumen to increase to a predetermined level above a pressure on the external wall.

Claim 11 (new): The method of claim 10 wherein the step of allowing a gas pressure on the lumen side of the membrane walls to increase to a predetermined level above a pressure on the external wall is performed after the step of backwashing the membrane.

Claim 12 (new): A method of backwashing a hollow fiber membrane comprising:

immersing the membrane in a liquid suspension;

performing filtration of the liquid suspension through a wall of the membrane;

suspending the filtration process; and

applying a gas at a pressure below a bubble point to a liquid permeate within the hollow fiber membrane immersed in the liquid suspension.

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